



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,784	11/02/2001	Kevin A. Marshall	SUN1P749/P5575NP	3211
22434	7590	10/20/2005		
BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			EXAMINER KENDALL, CHUCK O	
			ART UNIT	PAPER NUMBER
			2192	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/052,784

Applicant(s)

MARSHALL, KEVIN A.

Examiner

Chuck O. Kendall

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-5,7-14 and 16 - 24 is/are pending in the application.
- 4a) Of the above claim(s) 3,6 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-5,7-14 and 16 - 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is responsive to the Amendments filed on July 20, 2005.

Claims 1 – 2, 4 – 5, 7 – 14 and 16 – 24 are pending.

### Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 or this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 16 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable by Chung et al. (US 6745348), hereinafter Chung et al. in view of Smith, Jr. et al. of record (Smith et al., US 5761510).

#### Claim 1

Chung teaches a method (e.g., see Abstract), apparatus (e.g., see FIG. 1 & associated text) comprising a processor (e.g., see CPU 10 FIGA & associated text) a memory (e.g., see RAM 14, disk units 20 FIGA & associated text), and a computer-readable medium storing instructions (e.g., col.4:27-32, see application 42 FIGA & associated text) for automatically generating data regarding errors in a software system (e.g., see Abstract), the software system including one or more software components (e.g., see 301A, source file 311A, 3018, 301C FIG.3 & associated text), the method comprising:

obtaining/examining contents of one or more files (e.g., see Table 1 col.6:10-26) indicating one or more errors (i.e., file history/record of one or more errors) (e.g., see Errors col.6:12-25) in the software system to determine (i.e.,

Art Unit: 2192

identify) one or more of the software components (i.e., source files) prone to or responsible for the errors (e.g., see Component col.6:12-25) and a number of the errors, attributed to each of the software components determined to be responsible for the errors (e.g., see 203 FIG.2 & associated text, see Errors col.6:12-25); and

determining a size of the one or more software components responsible for the errors (e.g., number of lines of code col.2:1-4, see 201 FIG.2 & associated text, see Lines of Code Scanned col.6:11-25).

Chung does not expressly disclose said errors being errors generated during execution of the software system. However, Smith et al. disclose a method for identifying errors generated during execution (e.g., see errors, test application, execution Abstract; 98 FIG.3 & associated text; 240, 250 FIG.5 & associated text; see executable test application 120, errors, header error file 140 col.13:30 - 60; see Error Table, errors, execution, test program col.14:19-25) of a software system (e.g., program interface, test application, Abstract; see API 98 FIG.3 & associated text; see Test Application 120 FIG.4 & associated text) comprising one or more software components (e.g., see Header File 100 FIG.4 & associated text; 210, 260 FIG.5 & associated text; see 285 FIG.7 & associated text) and storing said the errors generated during execution in one or more history/record files (e.g., see HeaderError File 140 FIG.4 & associated text; see Error Table FIG.8 & associated text; see header error file 140, TEST LOG col.8:10-57; see header error file 140, Error Table, TEST LOG col.10:17-41).

Chung and Smith are analogous art because they are both directed to monitoring, identifying errors in software programs. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of Smith into that of Chung for the inclusion of identifying "errors generated during execution" of the software program. And the motivation for doing so would have been to ensure that library program functions associated with the program can be called dynamically (i.e., during execution).

Art Unit: 2192

and accessed by other programs written in other languages and perform as they were programmed to performed (see Smith et al., co1.1:60 - col.2:5; col.2:67-co1.3:30; col.3:59-65).

#### Claim 2

The rejection of base claim 1 is incorporated. Chung et al, further teach correlating the size (e.g., number of lines of code col.2: 1-4, see 201 FIG.2 & associated text, see Lines of Code Scanned col.6:1125) of the determined software components (e.g., see Component col.6:12-25) with the number of errors attributed to the determined software components (e.g., see 203 FIG.2 & associated text, see Errors co1.6:12-25), thereby enabling data indicating a probability of errors (e.g., see 204 FIG.2 & associated text, col.6:45-56) occurring during execution (e.g., col.1:15-21, see internationalization faults/errors col.1:58-60) of a set of software components to be generated from the determined size of the software components determined to be responsible for the errors and the number of the errors attributed to each of the software components determined to be responsible for the errors (e.g., see FIG.2 & associated text).

#### Claims 3, 16

Claims recite limitations which have been addressed in claims 1, 2, therefore, are rejected for the same reasons as cited in claims 1, 2.

#### Claim 22

Claim recites a computer-readable medium version of the method addressed in claim 1, therefore, is rejected for the same reasons as cited in claim 1.

Claims 23, 24

Claims recite an apparatus version of the method addressed in claim 1, therefore, are rejected for the same reasons as cited in claim 1.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al. in view of Smith et al. further in view of Ruhlen et al. (US 6665824), hereinafter, Ruhlen et al.

Claim 4

The rejection of base claim 1 is incorporated. Chung et al. and Smith et al. does not expressly disclose the contents of one or more files examined further indicating one or more source code modifications made in response to the errors. However, Ruhlen et al. disclose a method for tracking/counting errors which occur during the execution of the software components (e.g., col.1:15-18, col.1:23-28, see failure reporting executable 230 FIG.2 & associated text) in a software system including one or more software components (e.g., col.1:10-13), storing the modifications (i.e., source code changes) made in response to the errors (e.g., col.1:63-67), in a file (e.g., see repository 235 FIG.2 & associated text, col.2:11-13). Chung et al. and Smith et al. (hereinafter CS) and Ruhlen et al. are analogous art since they are both directed to tracking and counting the number of errors occurred in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of Ruhlen et al. into that of CS to include tracking and storing modifications made in response to the errors. And the motivation for doing so would have been to minimize the time and cost of error query processing as conventionally performed by a computer program, thus improving the technique for locating of errors in a software system and improve the handling of error queries and technical support in an environment where the

Art Unit: 2192

software system is distributed and used by a large number of clients (e.g., see motivation suggested by Ruhlen et al. col.1:29-36; col.1:43-65).

#### Claim 5

The rejection of base claim 4 is incorporated. Ruhlen et al. further teach wherein determining from the one or more files one or more of the software components responsible for the errors comprises: determining from the source code modifications/changes (e.g., see application version number, module version number col.6:66-col.7:3, see "10.0.2310.1 ", "10.0.2312.1" co1.7:10-25) one or more software components modified (e.g., see application program name, module name col.6:66-col.7:3, see "Winword.exe", "mso.dll" co1.7:10-25) to correct the errors (e.g., see failing instruction's instruction pointer col.6:66-col.7:3, see "Obcd1234"co1.7:10-25). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made combine the teachings and the motivation for doing so would have been that which has been as applied to claim 4.

5. Claims 7-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al. in view of Smith et al. in view of Ruhlen et al, further in view of Leung (US 6769114), hereinafter, Leung.

#### Claim 7

The rejection of base claim 1 is incorporated. Ruhlen et al teach wherein examining contents of one or more files indicating one or more errors in the software system comprises generating a list of one or more errors corresponding to source code changes (see claim 4). The combined teaching (Chung et al. 8 Smith et al. & Ruhlen et al), hereinafter referred to as CSR, do not expressly disclose generating a list of one or more files associated with successful attempts to correct the errors. However, Leung discloses a method (e.g., see Abstract) of

Art Unit: 2192

tracking/associating errors (e.g., col.6:25-41) with modifications (i.e., versions, files, source code changes) (e.g., see software modifications col.3:25-29, see second version col.9:20-23, col.12:58-61) and associating modifications with successful attempts (e.g., see previous passed integration tests col.3:25-29, col.9:20-23) to correct the errors (e.g., col.1:19-23, see interface error col.9:27-28, see sequence error col.9:31-32, col.12:62-64, col.11:1-6). CSR and Leung are analogous art since they're both directed at tracking errors in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of CSR with that of Leung to include the associating of modifications with successful attempts to correct the errors. And the motivation for doing so would have been to monitor the modifications of software components and prevent them from invalidating previous tested and passed versions (i.e., successful attempts to correct errors/defects) of the software components (see motivation suggested by Leung Abstract; col.1: 24-50; col.6:42-46; col.6:65-col.7:5; col.10:13-20; col.14:42-47; col.15:19-30).

#### Claims 8-9 and 13-14

Claims recite limitations which have been addressed in claims 4 and 7, therefore, are rejected for the same reasons as cited in claims 4 and 7.

6. Claims 10-12, 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al. in view of Smith et al. in view of Ruhlen et al. further in view Hanson (US 5946493), hereinafter Hanson.

#### Claim 10

The rejection of base claim 1 is incorporated. Ruhlen et al. teach wherein determining a size of the one or more software components responsible for the errors comprises determining a section of code modified (i.e., modifications,



Art Unit: 2192

versions) to fix an error (see claim 5). The combined teaching of Chung et al., Smith et al. and Ruhlen et al. (CSR) do not expressly disclose determining start and end lines of a section of code. However, Hanson discloses a method (e.g., see Abstract) for determining the start (e.g., see first line 112 FIG.3A & associated text) and end lines (e.g., see last annotated line 116 FIG.3A & associated text) of a section of code (e.g., see FIG.2A, 213, 2D & associated text), matching one or more line numbers associated with source code against compiled information (e.g., see 101 FIG.3A & associated text) associated with the source code (e.g., see 106 FIG.3A & associated text, col.1:32-36, col.1:53-58), converting the start (e.g., see (JOJ FIG.2A & associated text) and end lines (e.g., see j12J FIG.2A & associated text) of a section of source code to the start (e.g., see 28 FIG.2B & associated text) and end lines of a current version (e.g., see 40 FIG.2 B & associated text, see object code col.1:32-36) of a file (e.g., see 108 FIG.3A & associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of CSR with that of Hanson to include determining the start and end lines for a section of code modified to fix an error, matching line numbers associated with the modified source code against compiled information associated with the source code and converting the start and end lines of a section of code to the start and end lines of a current version of a file. And the motivation for doing so would have been to generate a listing associating/mapping the object code (compiled) instructions with the source code instructions which can be used to debug the program, investigate performance problems, and improve the analysis of the quality of the compiled object code (see motivation suggested by Hanson col.1: 42-60).

Claims 11-12, 17-19, 21

Claims recite limitations which have been addressed in claims 5 and 10, therefore, are rejected for the same reasons as cited in claims 5 and 10.

Art Unit: 2192

## Claim 20

The rejection of base claim 18 is incorporated. Hanson further teaches comparing information associated with a source code to determine one or more line numbers associated with the modified source code (e.g., see 108 FIG.3A 8 associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to combine the teachings of Hanson and CSR and the motivation for doing so would have been that which has been applied to claim 10.

***Response to Arguments***

7. Applicant's arguments filed July 20, 2005 have been fully considered but they are not persuasive.

Applicant has primarily based his argues as pointed out on page 8, last paragraph of his response (07/20/2005) that Examiners motivation to combine Chung and Smith is flawed because, Chung is not directed to monitoring and/or identifying errors in software programs.

Contrary to Applicants assertions with regards to monitoring, Examiner does believe that Chung does in fact discuss monitoring and/or identifying errors in software programs. In column 3: 20 – 28, Chung discloses that, “an analysis may be conducted to identify internationalization *faults*, e.g., errors, warnings...” (Emphasis added). As noted, Chung clearly discloses monitoring (analysis) and/or identifying errors. Hence Examiner maintains that the motivation to

Art Unit: 2192

combine based on Chung being directed to monitoring and/or identifying errors is in fact accurate.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Art Unit: 2192

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.



**TUAN DAM**  
**SUPERVISORY PATENT EXAMINER**